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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,378	01/09/2001	James Brady	98-C-037C1	6527

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EXAMINER

LEE, BENNY T

ART UNIT	PAPER NUMBER
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2817

DATE MAILED: 01/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Patent and Trademark Office**Address : COMMISSIONER OF PATENTS AND TRADEMARKS
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FILED DATE

69/757378

☐ This application has been examined ☒ Responsive to communication filed on 27 Sept 2003 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire Three (3) month(s), 2 days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|---|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1, 3-6, 9-11, 13, 14, 16-19, 21-30 are pending in the application.
Of the above, claims 21-30 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1, 3, 4, 9, 10; 11, 13, 14, 16; 17-19 are rejected.
5. ☒ Claims 5, 6 are objected to.
6. ☒ Claims 1, 3-6, 9-11, 13, 14, 16-19, 21-30 are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed _____, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

PTOL-325 (Rev. 9-89)

EXAMINER'S ACTIONSN 751378
U.S.GPO:1990-259-282

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Newly submitted claims 27-30 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: These claims recite transmission lines connected by switches such as to function as independent transmission lines or interconnected transmission lines. Such an inventive concept patentably distinguishes from the claims of the originally examined invention in that the originally examined invention utilized no switches and the transmission lines thereof were interconnected in a manner distinct from that of the switched transmission line concept.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 27-30 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Applicant's traverse of the examiner's withdrawal of claims 21-26 based on original presentation in the response of 22 September 2003 is acknowledged. The traversal is on the ground(s) that the subject matter of claims 21-26 do not constitute two inventions which are independent and distinct and that the examiner has not established a serious burden to examination. In particular, applicants' assert that the claimed invention define the same essential characteristics of a single disclosed embodiment and that no reason has been provided establishing a serious burden on the examiner in examining these claims. This is not found persuasive because of the following reasons: First, it should be noted that applicants' invention, while having common characteristics, is not a single disclosed embodiment. In particular, one embodiment structurally

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comprises a main conductor trace and at least one additional conductor trace associated therewith while the other embodiment structurally comprises plural conductor traces operatively interconnected by switching elements, and as such are clearly structurally distinct from each other. Moreover, both embodiments function with different modes of operation (i.e. in one embodiment, the signal is carried only by the main conductor trace, while in the other embodiment, the selection of the switching elements determines the signal path). Accordingly, it is believed that the examiner has indeed established that the switch embodiment of applicants' invention is indeed patentably distinct in terms of structure and function from the conductor trace embodiment already examined. As to applicants' second argument, it should be noted that by virtue of the different structure and function of the switch embodiment, the two embodiments are sufficiently divergent as to unduly burden the examiner. That is to say, a search of the signal conductor embodiment would be limited to those areas pertaining to signal conductor arts, while additional and burdensome searching in the switching art is required for the switch embodiment.

The requirement is still deemed proper and is therefore made FINAL.

Claims 21-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the response of 22 September 2003.

The following claim has been found objectionable for reasons set forth below:

In claim 4, should "each" be deleted as being unnecessary?

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In claim 11, lines 7, 11, note that “a second area” should correctly be --the second area-- for proper antecedent basis.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, 4, 9, 10, 11, 13, 14, 16, 17, 18, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese patent Abstract ('870) in view of the EP ('600) reference (both of record).

The Japanese Patent Abstract also discloses a main signal line (1) connected between a first or driver terminal (7) and a second opposite load terminal (8), where the first terminal includes a driver or source (4) attached to the main signal line. Note that sub-signal lines (2, 3) are disposed parallel to the main signal line (1) at opposite sides thereto. Moreover, note that first ends of the sub-signal lines (2, 3) are connected to the first terminal (7) in an area adjacent thereto. Furthermore, note that second opposite ends of the sub-signal lines are left unconnected adjacent the second terminal (8). In operation, note that the sub-signal lines (2, 3) provide for stray capacitances (9, 10) relative to the main line and whose capacitance value can be used to increase the propagation speed of signals in the main signal line and thus reduces propagation delays therein. Furthermore, note that the main signal line and the sub-signal lines are arranged in a planar arrangement. However, the Japanese Abstract differs from the claimed invention that the sub-signal lines (2, 3) are not arranged in a vertical or stacked configuration with the main signal line (1).

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Note that Fig. 10 of the EP reference discloses a main transmission line conductor (TL) and auxiliary conductor (AL) disposed parallel to and in a vertical or stacked orientation relative to the main conductor (TL) as well as auxiliary conductors disposed in a planar arrangement with the main conductor. As is evident from fig. 9 the main conductor (TL) is connected at one end thereof to a source or driver (IT) and connected at a second opposite end to an internal or load circuit (10). Moreover, as is evident from fig. 9, the auxiliary circuits (AL), of which only one is depicted in Fig. 9, has a first end thereof connected at an area adjacent the source or driver while the second opposite end of the auxiliary conductor is left unconnected in a second area which is adjacent the internal circuit (10). In operation, it should be noted that the effect of the auxiliary conductors is to reduce stray capacitance between the main and auxiliary conductors, thereby reducing the propagation delay and thus increasing the speed of clock pulses on the main transmission line.

Accordingly, it would have been obvious in view of the references, taken as a whole to have physically realized the main line (1) and the sub-lines (2, 3) of the Japanese Abstract in a stacked or vertical configuration, as taught by Fig. 10 of the EP ('600) reference. Such a modification would have been considered an obvious substitution of art recognized equivalent main and sub-line configurations from the same field of endeavor, especially since the generic nature of the Japanese Abstract's configuration (i.e. the configuration can be of any orientation, e.g. horizontal, vertical, etc), thereby suggesting that any equivalent configuration (e.g. the vertical or stacked configuration of the EP reference) would have been usable therewith.

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Moreover, note that as an obvious consequence of the modification, the vertical or stacked configuration in the combination would obviously have included sub-lines which would have been above and below the main line such as to have been consistent with the teaching of the Japanese Abstract.

With respect to claims 10, 16, 19, although the dimensions of the metal conductors constituting the main transmission line/signal conductor and the sub-signal/auxiliary line conductor are unspecified, the selection of such dimension (i.e. to be about 1000 micron) would have been considered to have been a design optimization, whose value would have been within the purview of one of ordinary skill in the art, based on desired operating conditions, thereby suggesting the obviousness of such an optimization.

Applicant's arguments filed 22 September 2003 have been fully considered but they are not persuasive.

Applicants' have argued that the examiner has failed to established a prima facie case of obviousness in that: 1) suggestion or motivation to modify or combine the references is lacking; 2) there must be a reasonable expectation of success; 3) all the claimed limitations must be met. More particularly, applicants' assert that neither reference: 1) discloses vertically stacking three conductors to attenuate parasitic capacitance as claimed; 2) provide any basis for a reasonable expectation of success; 3) suggests that the effects of such a capacitive coupling may be negated by the insertion of an intervening auxiliary line.

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Applicants' arguments have been considered in light of the presented claims, but have been found unpersuasive. In particular, the examiner believes that a prima facie case of obviousness has indeed been established. Contrary to applicants' assertion, it should be noted that the combination of references takes into account that the Japanese reference includes two auxiliary lines adjacent opposite sides of the main conductor in a generic fashion (i.e. suggesting horizontal, vertical, diagonal, etc placement). Moreover, the EP reference discloses in one embodiment horizontal placement of the main and auxiliary conductors, and in another embodiment suggests an exemplary teaching of vertical stacking of the main and auxiliary conductors as an alternative to horizontal placement of such conductors. Accordingly, since the Japanese reference specifically has two auxiliary conductors, obviously, as a consequence of the modification, those two auxiliary conductors would have been carried over to the vertical stacking arrangement resulting from the modification. Furthermore, since the modification would have resulted in a circuit whose structure would have corresponded to the structure of applicants' invention, then such a modified structure, by virtue of it's like structure to applicants' invention, would have functioned in a like manner to that of applicants' invention. Thus in view of the noted like structure and function resulting from such a modification to the structure and function of applicants' invention, clearly there would have been a reasonable expectation of success established.

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Claims 5, 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Benny Lee at telephone
number ~~202-491-1212~~ **571 272 1764**.

Benny Lee